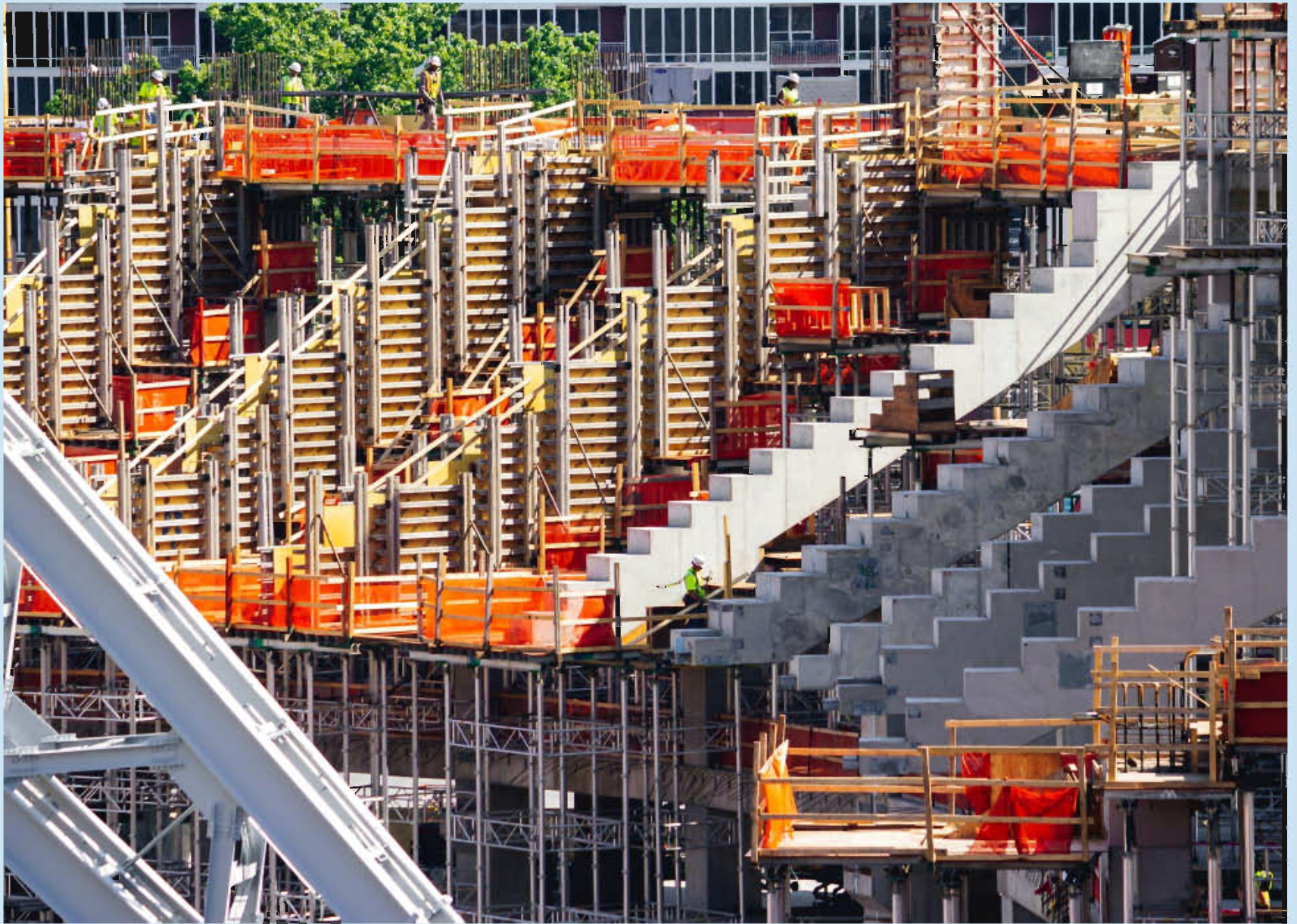


Vikings Stadium Project

People's Stadium









Owner: Minnesota Sports Facilities Authority (MSFA)

Operator: Minnesota Sports Facilities Authority (MSFA)

Capacity: 65,000 (expandable to 73,000)

Construction: Broke ground 12/3/2013
Projected opening August 2016

Construction Cost: \$1.024 Billion

Architects: HKS, Inc.
Dallas, TX

General Contractor: Mortenson Construction

EVS' Roles

- **Lead Civil Engineer**

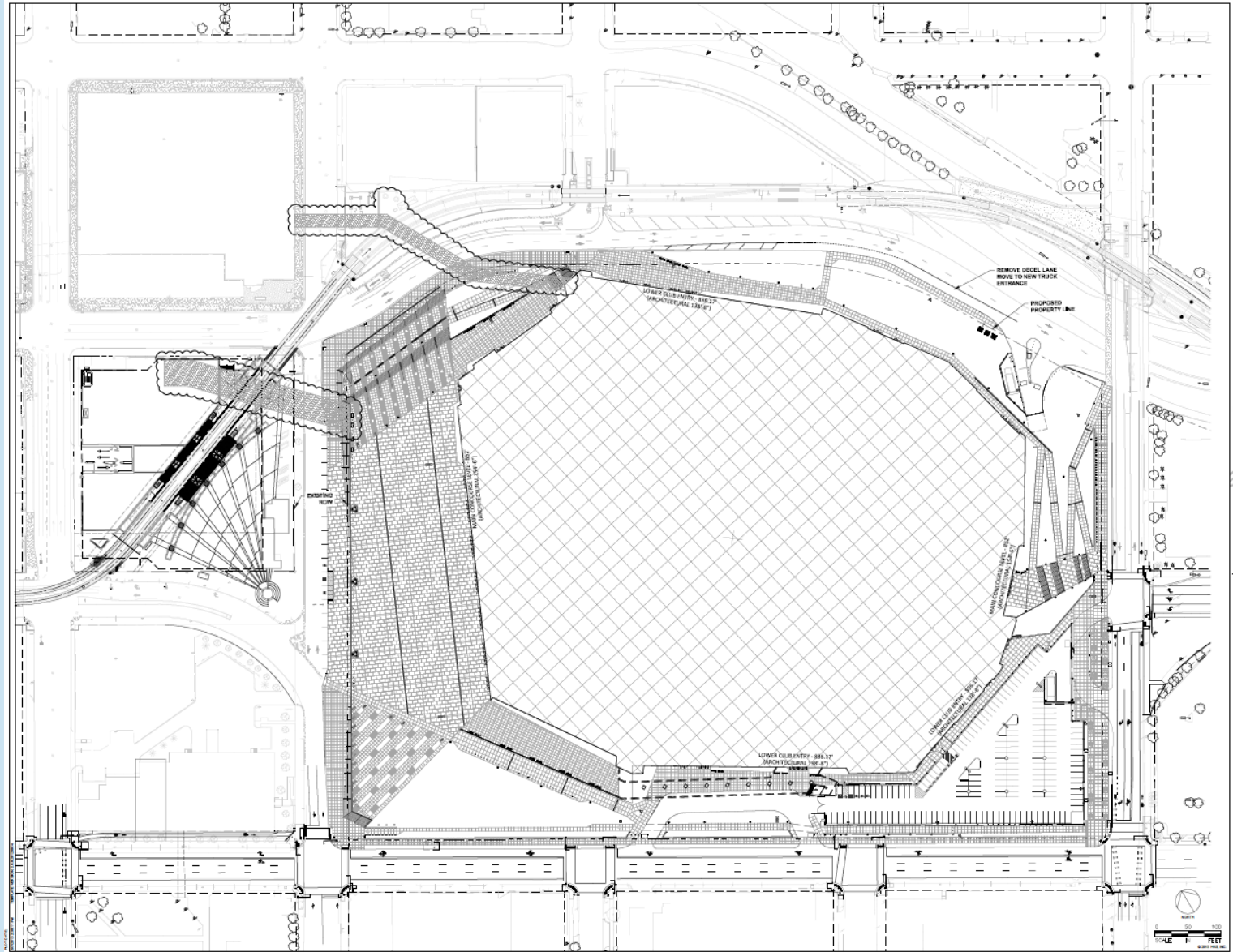
- Stormwater Management
- Utilities
- Parking
- Grading
- Street Realignment

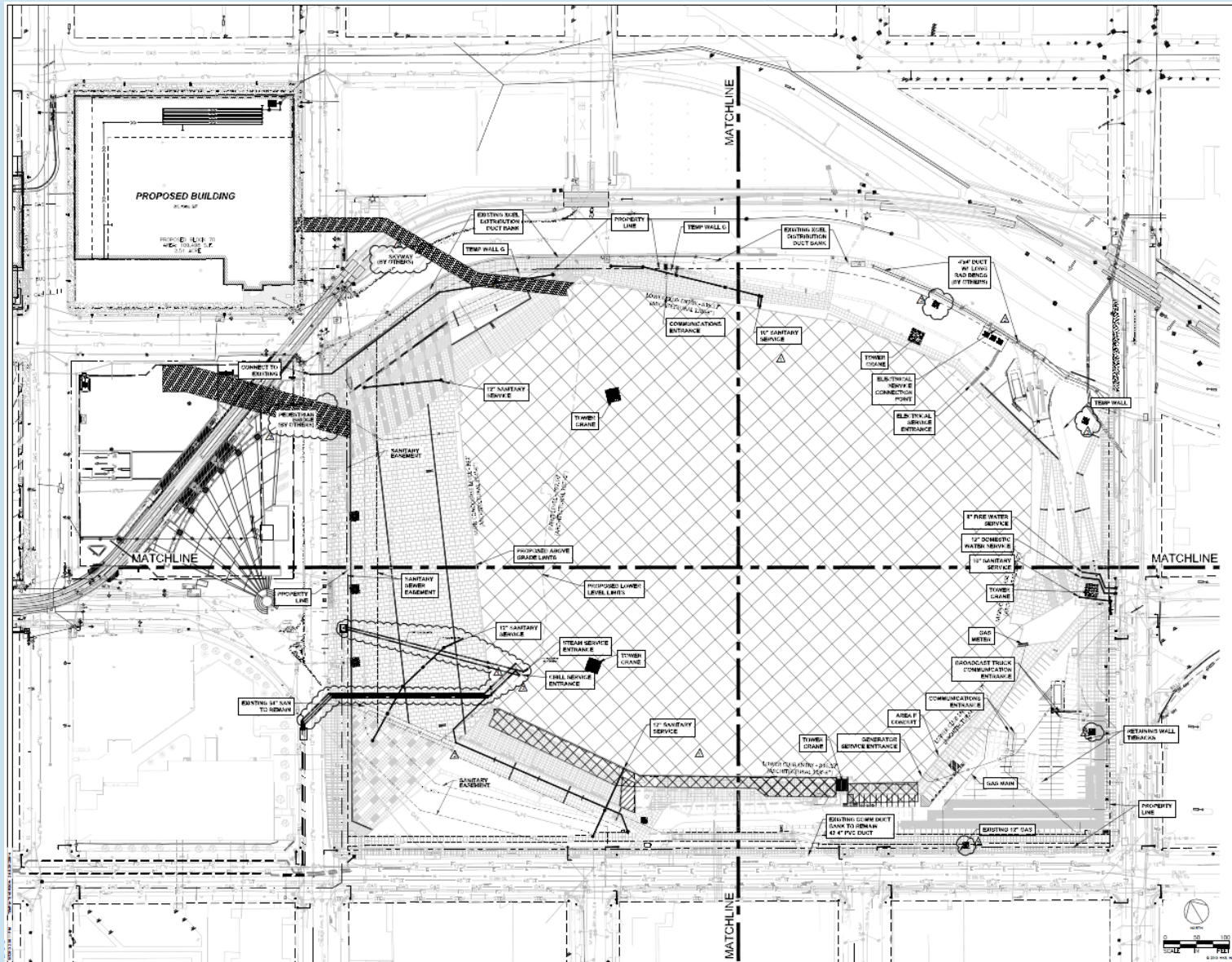
- **Design Survey**

- **Construction Survey**

- **Vibration Monitoring**

- During the Demolition





Future Events

- 2018 Super Bowl**
- 2019 NCAA Final Four**
- Potential Professional Soccer Team**
- Many other events**

Who is EVS?

- **Founded in 1979; 35 Years in Business**
- **Small Business in Eden Prairie**
- **Staff of 28 People**
- **Certified DBE & MBE**

Project Experience

- **Commercial**
- **Retail**
- **Residential**
- **Military**
- **Renewable Energy**
- **Power**
- **Transit**
- **Roadways**

Land Surveying

35W Bridge Reconstruction



Transit Design

Hiawatha LRT



Site Design

US Army Corps of Engineers – Ft. Lewis, WA

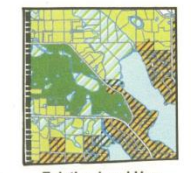
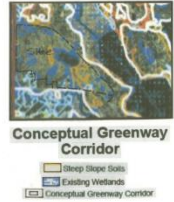


Residential Development Lakeview Golf Course, Orono

Environmental Protection Plan
 The Metropolitan Council's Storm Water Impact Investigation (1973)
 The objectives of storm drainage design should be revised from rapid disposal to concepts which will decrease the impact of storm water by reducing peak flows and improving quality.
 The design criteria should include concepts such as on-site disposal, retention ponds, retention of recharge areas and marshes, grass waterways, and other new methods of management of storm water which may decrease capital requirement for new development.

Map 3.4-5 to a Conceptual Greenway Corridor Alignment developed by HCBUS taking into account a number of guiding elements, including:
 1. High and Moderate quality natural areas
 2. Other unique and/or ecologically significant areas
 3. Riparian areas including banks of water and wetland complexes
 4. Natural corridors with natural semi-natural areas (streams, drainageways, floodplains, steep slopes)
 5. Connectivity to surrounding communities identified natural corridors
 6. Large publicly and privately owned protected open space
 7. Semi-natural areas that occur immediately adjacent to natural areas
 8. Areas that would serve as logical links between natural areas, particularly those that have potential for restoration to natural vegetation.

Monarchs at Risk!
 The monarch migration was led by the International Center for Monarch Conservation (ICMC) and the Minnesota Department of Natural Resources (DNR) in 2006. The monarch butterfly population has declined by 90% since 1997. The loss of monarch butterflies is a global phenomenon. The conservation status of monarchs is declining due to habitat loss and fragmentation. Insecticides, particularly neonicotinoids, are a major threat to monarchs. The loss of monarch butterflies is a global phenomenon. The conservation status of monarchs is declining due to habitat loss and fragmentation. Insecticides, particularly neonicotinoids, are a major threat to monarchs.



SITE CONSERVATION SUMMARY

GROSS SITE AREA	132.50 AC
LESS WETLANDS	14.30 AC
LESS PRIVATE STREET	7.00 AC
NET SITE AREA	114.53 AC
PROPOSED LOTS	55 UNITS
AVERAGE LOT SIZE	2.08 AC/LOT
CONSERVATION AREA 65.57 AC	= 48%
(INCLUDES PORTIONS OF LOTS NOT COMMITTED TO PAD, SEPTIC, FRONT YARDS)	

Conservation Design Check List

<p>Item 10-1044: Application requirements and procedures</p> <p>Development Stage</p> <p>1. The project meets all other requirements for the State and Federal Environmental Protection Agency (EPA) and Minnesota Department of Natural Resources (DNR) requirements for wetland and riparian area protection.</p> <p>2. The project's wetland and riparian area protection plan is consistent with the Minnesota Department of Natural Resources (DNR) requirements for wetland and riparian area protection.</p>	<p>Item 10-1045: Wetland and riparian area protection</p> <p>1. The project's wetland and riparian area protection plan is consistent with the Minnesota Department of Natural Resources (DNR) requirements for wetland and riparian area protection.</p> <p>2. The project's wetland and riparian area protection plan is consistent with the Minnesota Department of Natural Resources (DNR) requirements for wetland and riparian area protection.</p>
<p>Item 10-1046: Wetland and riparian area protection</p> <p>1. The project's wetland and riparian area protection plan is consistent with the Minnesota Department of Natural Resources (DNR) requirements for wetland and riparian area protection.</p> <p>2. The project's wetland and riparian area protection plan is consistent with the Minnesota Department of Natural Resources (DNR) requirements for wetland and riparian area protection.</p>	<p>Item 10-1047: Wetland and riparian area protection</p> <p>1. The project's wetland and riparian area protection plan is consistent with the Minnesota Department of Natural Resources (DNR) requirements for wetland and riparian area protection.</p> <p>2. The project's wetland and riparian area protection plan is consistent with the Minnesota Department of Natural Resources (DNR) requirements for wetland and riparian area protection.</p>



CLIENT
 Source Land Capital

PROJECT
 Lakeview Golf Course

LOCATION
 Orono, MN

SHEET
 Detailed Conservation Master Plan and CMP Part 3-A References

#	DATE	REVISION

ISSUING CERTIFY THAT THIS PLAN, SPECIFICATIONS, OR REPORT WAS PREPARED BY ME OR UNDER MY SUPERVISION AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Scale: 1" = 200'
 DATE: 12-13-2013
 REVISIONS: MARK 218

DRAWN BY: MGD/MS
 CHECKED BY: DNB/DN
 DATE: 12.13.2013
 PROJECT #: 2013-018.1

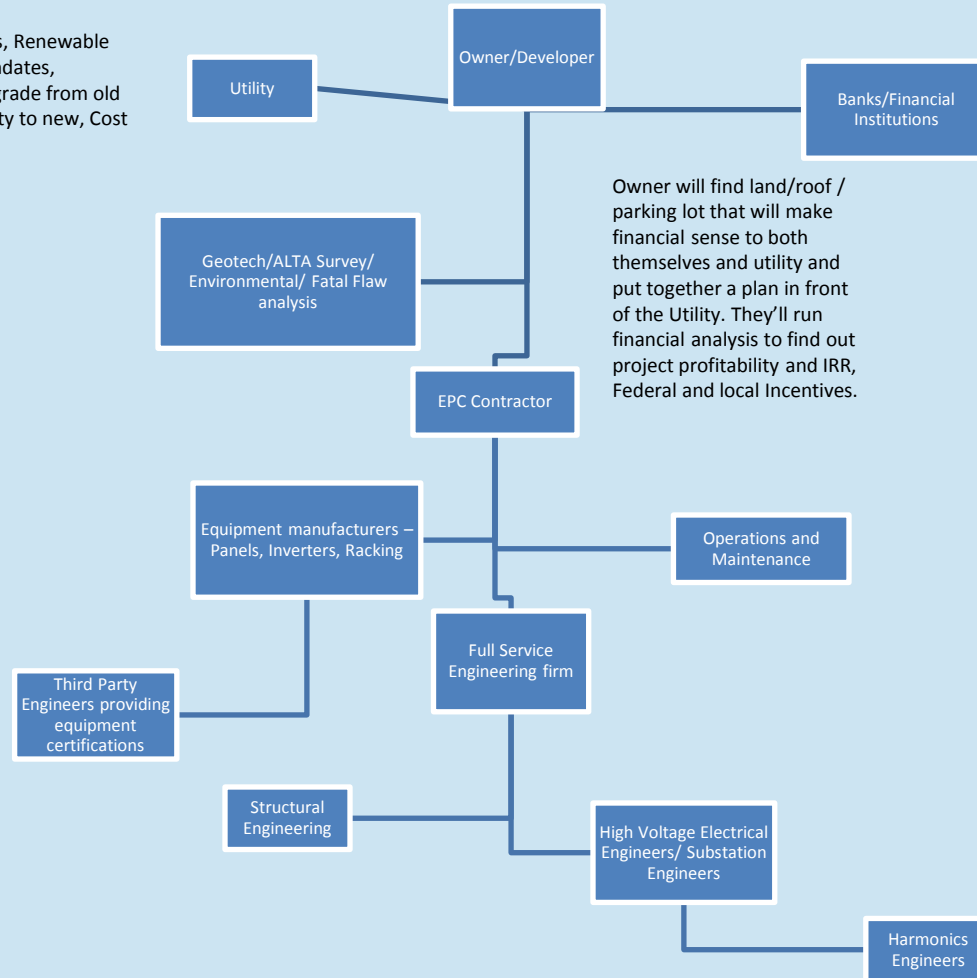
SHEET NUMBER
 7

Solar



Solar PV Project process flow

RPS Requirements, Renewable energy goals, mandates, Infrastructure upgrade from old source of Electricity to new, Cost competitiveness



Owner will find land/roof / parking lot that will make financial sense to both themselves and utility and put together a plan in front of the Utility. They'll run financial analysis to find out project profitability and IRR, Federal and local Incentives.

Driven by good financial returns over a 15/20 year Power purchase agreement

Services offered

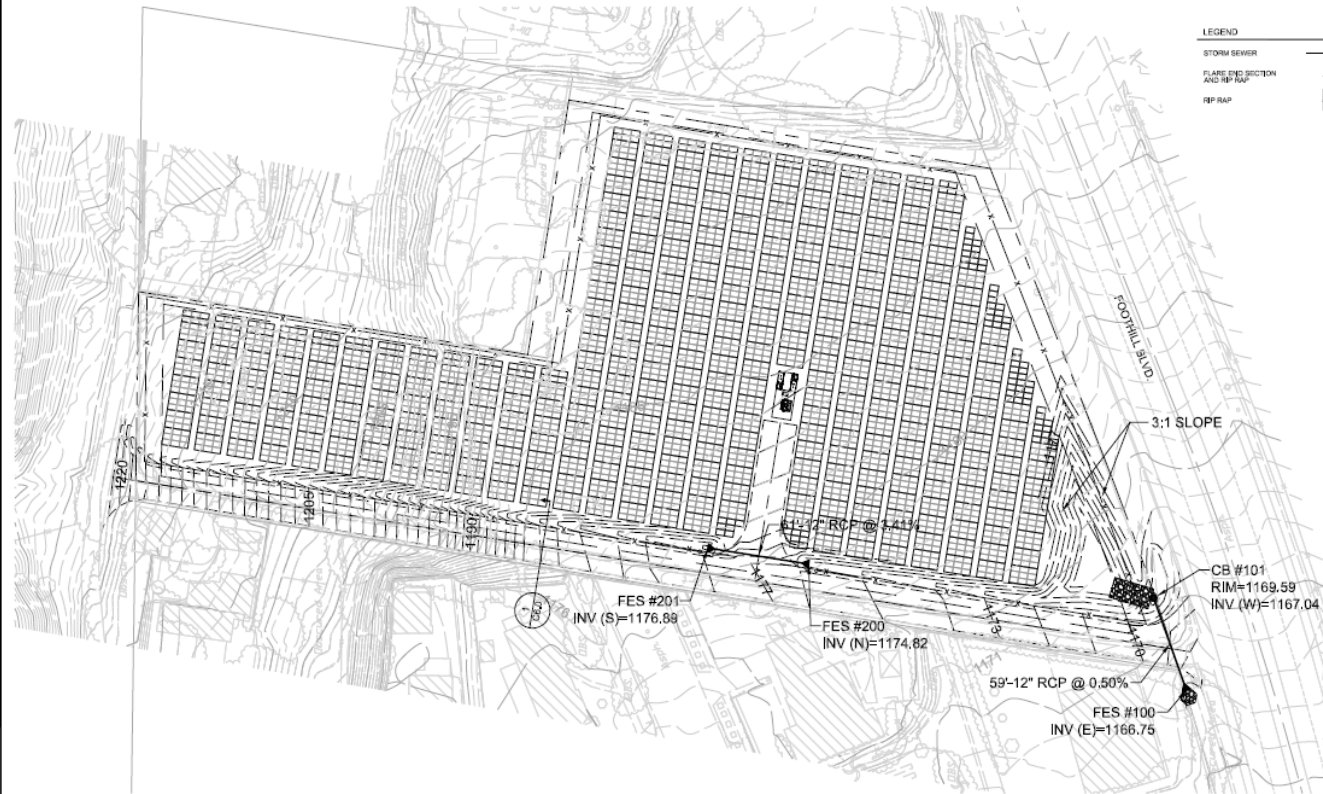
Electrical

- DC and Medium voltage Electrical Design
- Ampacity and Voltage drop calculations as per NEC guidelines
- Detailed PV layouts for permitting and IFC set.
- PV one line and three line diagrams.
- PVsyst Analysis
- PV Shading Analysis
- PV Equipment selection research support
- Environmental Analyses
- State PUC and Local Agency Permitting
- Phase I Environmental Site Assessments
- Technology Comparison
- EPC Bid Support
- Topographic Survey
- ALTA Survey
- Construction Inspection and Support
- Construction Staking
- As-Built Survey
- Commissioning

Civil

- Conceptual Site Planning
- Fatal Flaw Analyses
- Civil Engineering Design and full scale Engineering
- SWPPP
- Commissioning Observation
- I-V Trace curve and IR Scanning of modules
- Construction Support
- Performance verification.

1.3 MW Solar project LA County



LEGEND

STORM SEWER	
FLARED END SECTION AND RIP RAP	
RIP RAP	



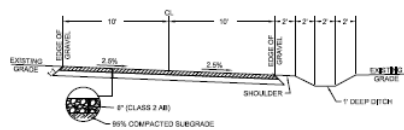
DRAWING LOG

NO. OF SHEETS	1
NO. OF SHEETS USED	1

ISSUED FOR PLANNING APPLICATION

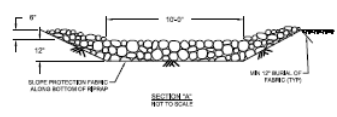
APPLICANT CONTACTS

CITY ENGINEER	
CITY ENGINEER - LAND DEVELOPMENT	
SURVEYOR	
DATE	



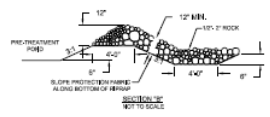
- NOTES:**
1. ROADWAY TO BE SURGUT TO MAINTAIN EXISTING SITE DRAINAGE
 2. PAVEMENT SECTION DEPENDENT ON GEOTECHNICAL RECOMMENDATION
 3. DRAINAGE AND FRICTION SWALE TO BE DESIGNED TO ADHERE TO CITY OF LOS ANGELES STORMWATER REQUIREMENTS

1 ACCESS ROADWAY DETAIL
NOT TO SCALE

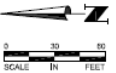


- NOTES:**
1. SECURE GEOTEXTILE AT TOP OF SLOPE USING ANCHOR BRICKS
 2. SEE PLAN FOR LIMITS OF WORK.

2 RIPRAP SPILL WAY
NOT TO SCALE



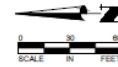
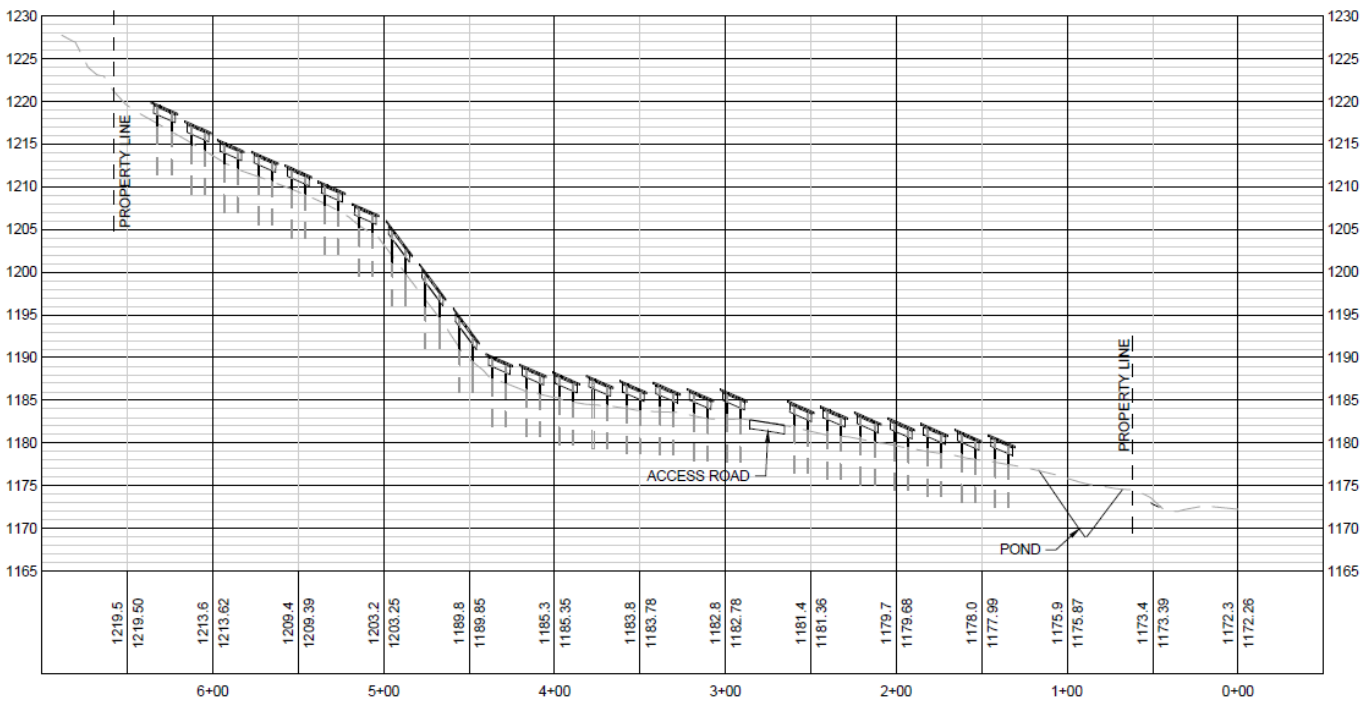
- NOTES:**
1. EXCESS SPILL WILL BE BLENDED ON SITE.
 2. EARTHWORK QUANTITIES:
CUT 111 CY
FILL 10 CY
NET CUT 99 CY



FOOTHILL SOLAR
LAT: 34.2727 / LONG: 118.3457
9971 FOOTHILL BLVD.
LOS ANGELES, CA 91342
GRADING PLAN

Sheet
C6.0

1.3 MW Solar project LA County



DRAWING LOG:

ISSUED FOR PLANNING APPLICATION

APPLICANT CONTACT:
 JAMES WILSON
 2121 20th Street, Los Angeles, CA 90004
 (310) 441-1111

SURVEYOR:
 EVS
 9971 Foothill Blvd., Los Angeles, CA 91342
 (818) 709-1111



FOOTHILL SOLAR
 LAT: 34.2737° / LONG: -118.3467°
 9971 FOOTHILL BLVD.
 LOS ANGELES, CA 91342
ARRAY PROFILE

Sheet:
C6.1

Project Experience

Alamo 2, TX | 4.4 MW Solar PV

In October 2013, EVS performed surveying services for a 4.4 MW solar PV project in Texas. Due to extended contract negotiations with the owner and contractor, EVS was given notice on a Thursday afternoon that a surveyor was needed the following week to begin the initial phase of construction staking. At no additional cost to the client, an EVS surveyor was onsite Monday afternoon and completed the required work exceeding the client's expectations.



Project Experience

Marshall, MN | 62 MW AC Solar PV

EVS is currently working on the Civil Engineering design for a 62 MW AC project in Marshall, MN. EVS also reviewed the DC Electrical layout and completed the ALTA survey and researched State and Local permit requirements and provided an assessment of grading and drainage constraints of the site, including county and private drain tile locations.

Three Solar Projects in Georgia | 51 MW, 76.5 MW, and 148.5 MW AC

EVS provided topographic survey services and is currently performing civil design services.

Minnesota Community Solar Garden Projects:

EVS is currently preparing Interconnection drawings for some Community Solar Garden projects. These projects range anywhere from 2-21 MW size of 1 MW block each.

U.S. Army Reserve Centers

Nationwide Construction Projects



U.S. Army Reserve Centers

Nationwide Construction Projects

- I. Recurring Issues
- II. Examine Project Approach
- III. Ongoing System Evaluation

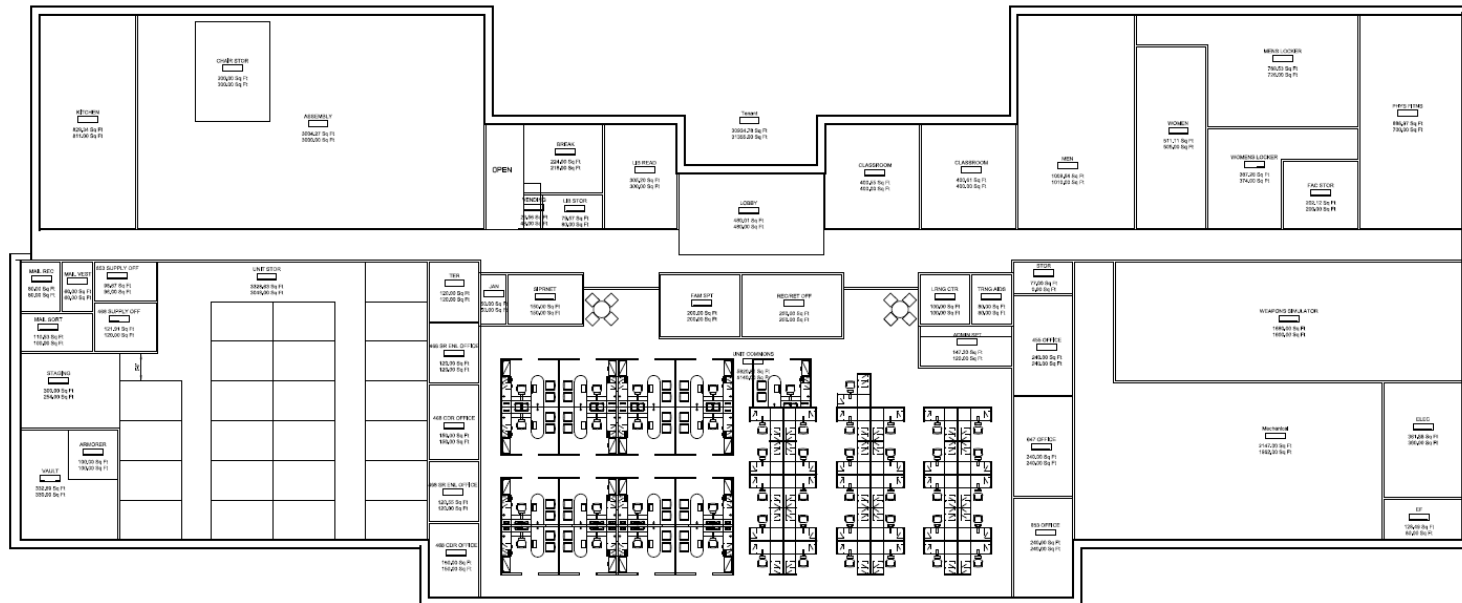
I. Recurring Issues

- A. Over budget
- B. Late
- C. Not meeting tenant units needs
- D. Each project treated individually (no defined system)

II. Examine Project Approach

A. Develop standard design and specifications

Modular Design System (MDS)



II. Examine Project Approach

A. Develop standard design and specifications

Modular Design System (MDS)

1. Define specific components to be incorporated in primary reserve center facilities (plus furniture)

- A. Classroom
- B. Assembly Hall
- C. Kitchen
- D. Physical Fitness Facility (w/locker rooms)
- E. Arms Vault
- F. Weapons Training Room (electronic)
- G. Unit Retention & Family Support
- H. Common Admin
- I. Commo Security

II. Examine Project Approach

A. Develop standard design and specifications

Modular Design System (MDS)

1. Define specific components to be incorporated in primary reserve center facilities (plus furniture)

J. Individual Offices

K. Unit Storage

L. Organizational Maintenance Shops (TEMF-Tactical Equipment Maintenance Facility S, M, L)

M. Medical Exam Room

N. Support Facilities (mechanical, electrical, fire protection, IT/Communication)

O. AT/FP

II. Examine Project Approach

A. Develop standard design and specifications

Modular Design System (MDS)

- 1. Define specific components to be incorporated in primary reserve center facilities (plus furniture)**



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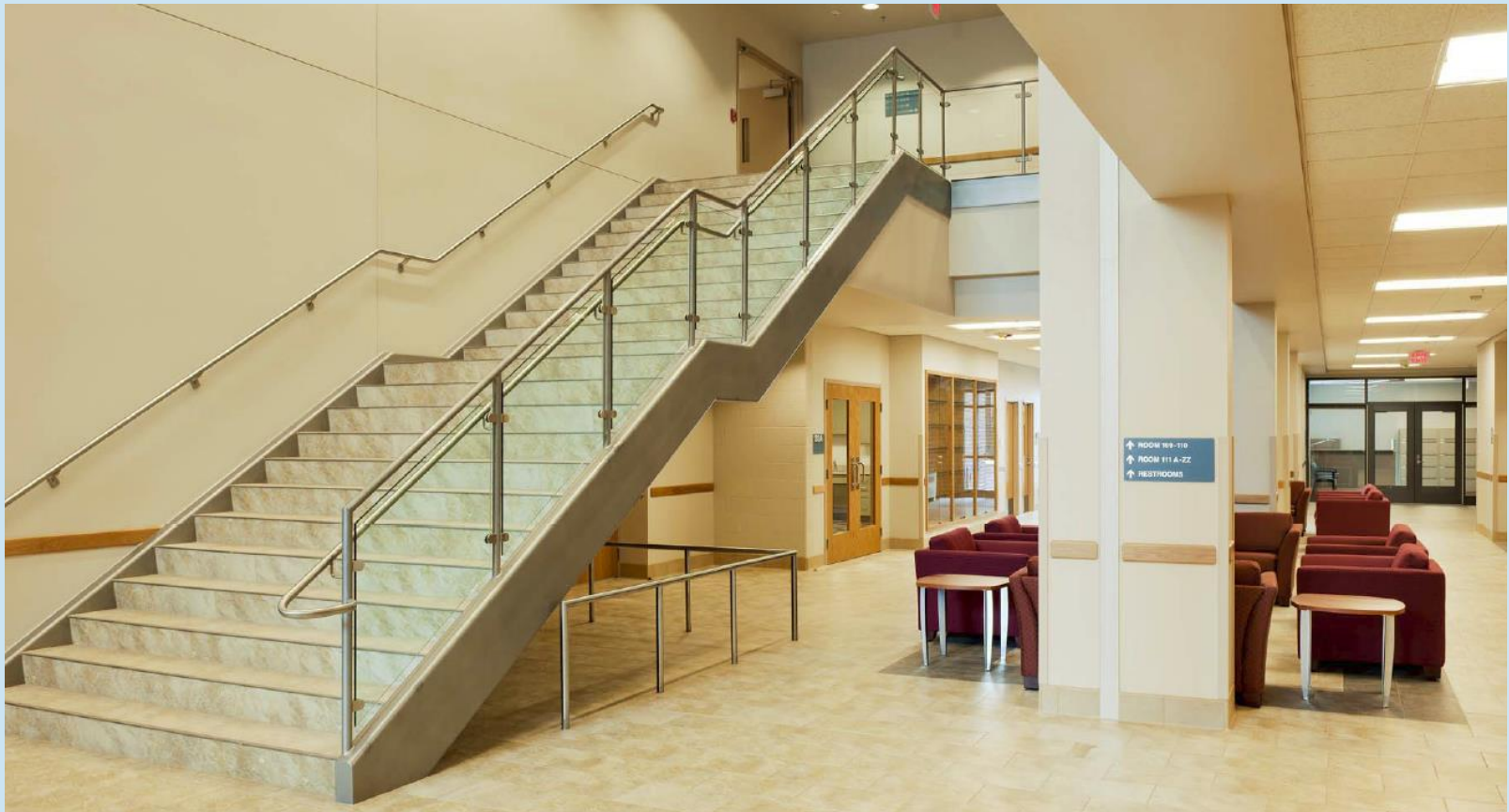


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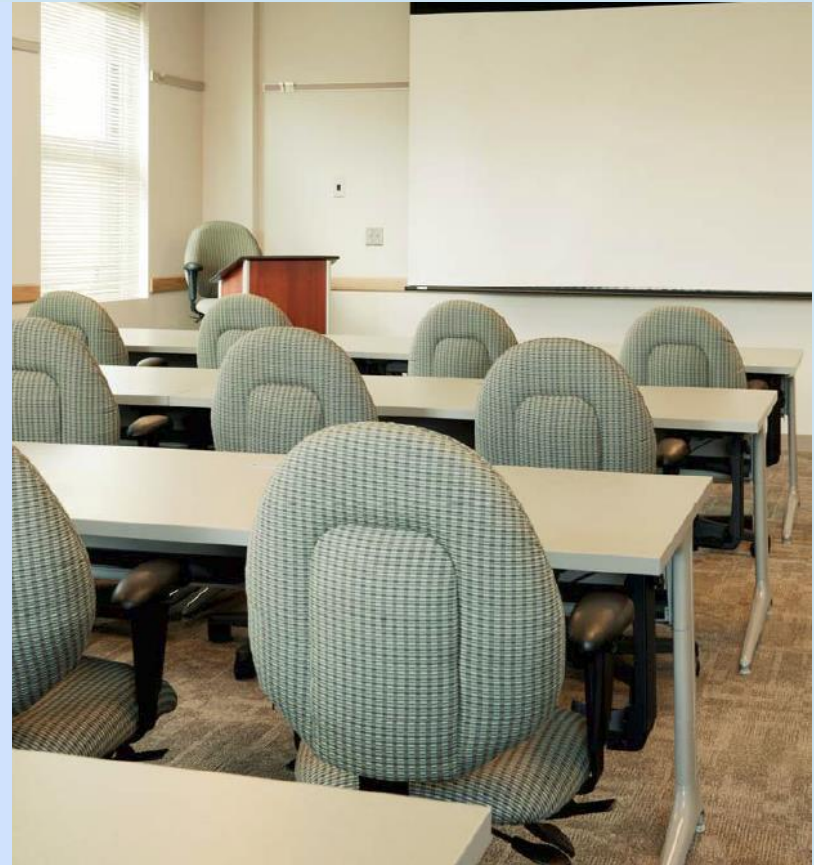


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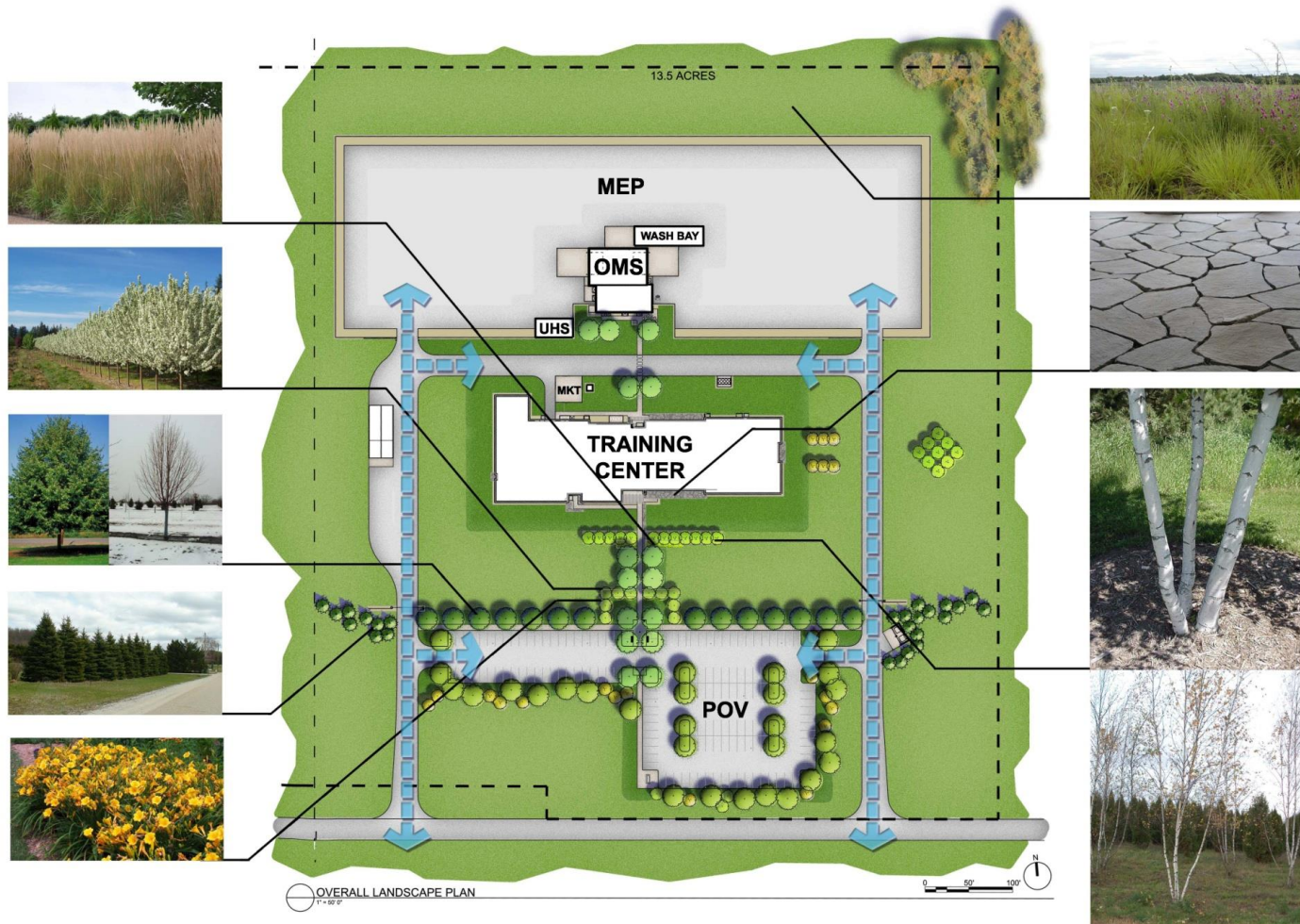
2. Site Design



US Army Reserve Center Locations



Typical Army Reserve Center Project



Typical Army Reserve Center Project



Binghamton, NY

- Energy Efficient Design
- Photo Voltaic Panels
- Green Roof
- Rainwater Storage
- Onsite Wind Turbine



Butte, MT



Ft. Sam Houston, TX

- Installation Management Command (IMCOM)



Ft. Sam Houston, TX

- Barracks



Joliet, IL

- Joliet Army Reserve Center



Joliet, IL

- Tactical Equipment Maintenance Facility (TEMF)



Joliet, IL

- Aerial of both ARC Project and TEMF Project



II. Examine Project Approach

A. Develop standard design and specifications

Modular Design System (MDS)

2. Site Design

- A. Site Selection
- B. Utility Services
- C. Drainage
- D. Transportation
- E. Vehicle Parking
 - i. Private Vehicle
 - ii. Military Equipment

II. Examine Project Approach

A. Develop standard design and specifications

Modular Design System (MDS)

2. Site Design



HEMTT
Howitzer



A1 Tank in Transport
Palletized Loading System



II. Examine Project Approach

A. Develop standard design and specifications

Modular Design System (MDS)

2. Site Design



Ft Lewis, WA – Chinook Hangar and Apron



Ft Lewis, WA – HQ and TEMF



Ft Indian Gap, PA – Armed Forces Reserve Center



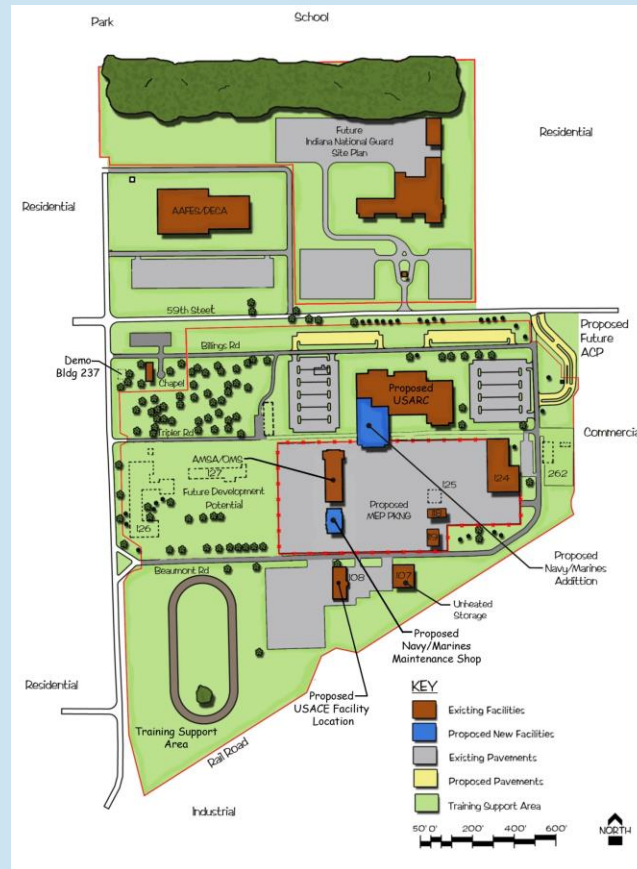
Lincoln, NE – Army Reserve Center

II. Examine Project Approach

A. Develop standard design and specifications

Modular Design System (MDS)

1. Define specific components to be incorporated in primary reserve center facilities (plus furniture)



Ft. Ben Harrison AFRC Photos



Site Photos



New Perimeter Fence Started



Main Entrance – Guard house next week



Navy POV – Curbs next



Running Track - Complete

Army Reserve



Army – Corridor 1st floor



Army - 1st floor framing



Army – Unit storage area

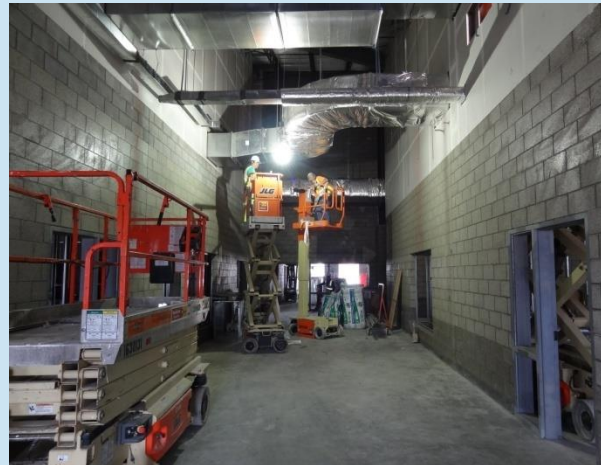


Army – 2nd floor roof deck 30%

Navy/Marine Reserve



Navy Common Above Ceiling



Navy/Marine Quarterdeck



Navy/Marine View



Navy/Marine Entrance View

OMS/AMSA



Administrative Area -
Will start rest of roof deck now that brick work
done to right



Radiant floor tubing to be installed and then
place concrete next week

VMF



VMF MEP parking



Entrance slab being placed

II. Examine Project Approach

A. Develop standard design and specifications

Modular Design System (MDS)

3. Special Components or Units

- A. Auditorium
- B. Medical Clinic
- C. Large Office
- D. Joint Services – Navy/Marine, National Guard
- E. Special Equipment – Heavy Armor, Fire Trucks
- F. Aviation

II. Examine Project Approach

A. Develop standard design and specifications

Modular Design System (MDS)

3. Special Components or Units



II. Examine Project Approach

A. Develop standard design and specifications

Modular Design System (MDS)

3. Special Components or Units



II. Examine Project Approach

A. Develop standard design and specifications

Modular Design System (MDS)

4. Sustainability

- A. LEED
- B. Energy Conservation
- C. Low Impact Design

II. Examine Project Approach

A. Develop standard design and specifications

Modular Design System (MDS)

4. Sustainability



II. Examine Project Approach

B. Project Management & Delivery System

1. U.S. Army Reserve Compound

A. Improve project planning and programming (1391)

1. COMPONENT AR		FY 2011 MILITARY CONSTRUCTION PROJECT DATA				2. DATE Apr 09	
3. INSTALLATION AND LOCATION Proposed Oca Site Michigan City, IN				4. PROJECT TITLE Army Reserve Center/Land			
5. PROGRAM ELEMENT 0532292A		6. CATEGORY CODE 171	7. PROJECT NUMBER CAR 11-MICTY		8. PROJECT COST (\$000) 15,716		
9. COST ESTIMATES							
ITEM		UM	QUANTITY	UNIT COST	COST (\$000)		
PRIMARY FACILITIES:					11753		
Land Purchase		AC	10	125,000.00	(1250)		
Training Building		SF	40,374	175.19	(7074)		
Maintenance Building		SF	10,965	233.54	(2565)		
Unheated Storage		SF	1,975	59.60	(197)		
Organizational Parking		SY	7,250	32.02	(234)		
Building Information Systems		LS	-	-	(129)		
SDD & EPAC05		LS	-	-	(204)		
Antiterrorism/Force Protection		LS	-	-	(102)		
SUPPORTING FACILITIES:					2407		
Site Improvement		LS	-	-	(2039)		
Paving - POW/Roads		SY	8,162	23.90	(194)		
Information Systems		LS	-	-	(145)		
Antiterrorism/Force Protection		LS	-	-	(24)		
TOTAL CONSTRUCTION COST					14160		
Contingencies (5.0%)					705		
Supervision and Administration (5.7%)					848		
TOTAL PROJECT COST					15716		
Equipment Funded Other Appropriations				(Non-Add)	(1755)		
10. DESCRIPTION OF PROPOSED CONSTRUCTION							
Construct an Army Reserve Center (ARC). Primary facilities include land acquisition and construction of an ARC training building, Organizational Maintenance Shop (OMS), unheated storage building, and organizational parking. Buildings will be of permanent construction with reinforced concrete foundations, concrete floor slabs, structural steel frames, masonry veneer walls, standing seam metal roof, Heating, Ventilation, and Air Conditioning (HVAC), plumbing, mechanical systems, security systems, and electrical systems. Supporting facilities include land clearing, paving, fencing, general site improvements, and extension of utilities to serve project. Accessibility for the disabled will be provided. Physical security measures will be incorporated into design including maximum standoff distance from roads, parking areas, and vehicle unloading areas. Berms, heavy landscaping, and bollards will be used to prevent access when standoff distances cannot be maintained. Sustainable Design and							
DD FORM 1391 1 DEC 76				Page 1 of 3 -			

II. Examine Project Approach

B. Project Management & Delivery System

1. U.S. Army Reserve Command/DoD

- B. Designate project officers with specific regional responsibilities
- C. Improve coordination with reserve on Reducing Support Commands (RSC) eventually reduce to 4 from 12
- D. Designate a primary service provider for design – Louisville District of USACE as design of choice
- E. Utilize and update standard specification (Uniform Facilities Guide Specifications or UFGS)
- F. Uniform Design Criteria (UFC) documents (DoD)
- G. Incorporate Commercial Standards & Equipment
- H. Louisville issues IDIQ contracts to supplement in-house design capabilities

II. Examine Project Approach

B. Project Management & Delivery System

2. Contract Delivery Methods & Standard Specifications

- A. Design/Bid/Build
- B. Design/Build
- C. Real Property Exchange (RPX)
- D. Utilize and Update UFC and UFGS documents
- E. Incorporate Value Engineering (VE)

II. Examine Project Approach

C. Communication and Support

1. Schedule Design Meetings

- A. Site selection
- B. Charrette
- C. Interim
- D. Final
- E. Special as needed (repurpose of existing buildings)

II. Examine Project Approach

C. Communication and Support

2. Meetings are located at or near project sites

3. Meeting Attendees

A. Representatives from all tenant units

B. Project offices (ARIMD)

C. Louisville District PM & PEA

D. Design consultants (A, C, E, M, sometimes S, LA, Geotech)

II. Examine Project Approach

C. Communication and Support

3. Meeting Attendees



II. Examine Project Approach

C. Communication and Support

3. Meeting Attendees



II. Examine Project Approach

C. Communication and Support

3. Meeting Attendees

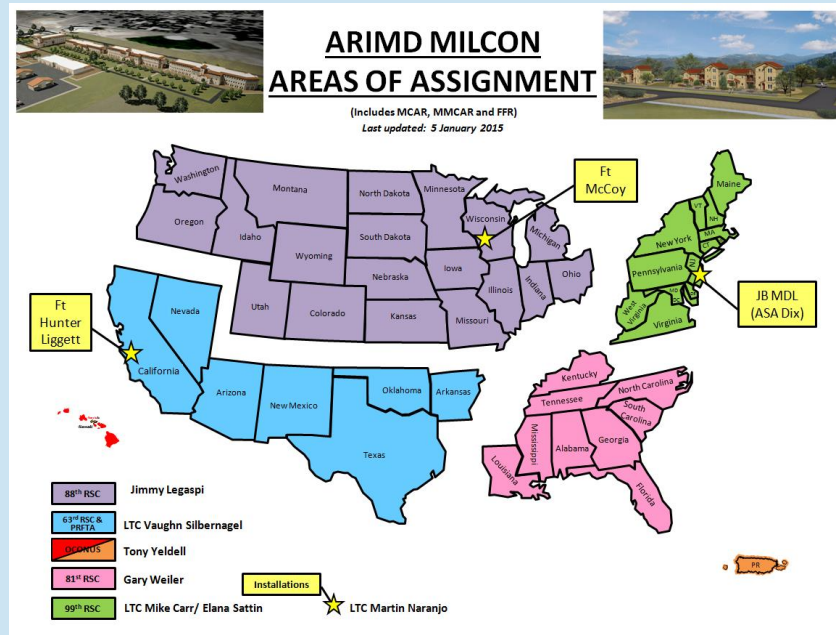


II. Examine Project Approach

C. Communication and Support

3. Meeting Attendees

E. RSC Representatives



II. Examine Project Approach

C. Communication and Support

3. Meeting Attendees

- F. Local USACE District construction representative
- G. BRAC officials
- H. “Offline” meeting (local utility providers, planning agencies, building officials, environmental agencies)

II. Examine Project Approach

C. Communication and Support

4. **Project design according to 1391 using standard design**
 - A. Strawman
 - B. 2-4 concept layouts
 - C. Distribute, meet, talk-through
 - D. Adopt preferred layout
 - E. Proceed to interim and final retaining and developing details
 - F. Incorporate special requests or needs (but ONLY when approved by project official and funded by ARIMD)
 - G. Develop “Ready-to-Advertise” document (through Louisville district)
 - H. Respond to bidder inquiries
 - I. Local corps district provide for onsite construction administration services
 - J. Respond to design questions during construction

III. Ongoing System Evaluation

- A. Use established USACE performance rating system
- B. Provide “Lesson Learned” to ARIMD through Louisville district
- C. Period teaming sessions with ARIMD, Louisville district, and contractors, RSCs and USACE construction representatives and support centers
- D. Update UFC documents
- E. Update UGFS sections
- F. Update Div. 00 documents (USACE & ARIMD)

III. Ongoing System Evaluation



III. Ongoing System Evaluation



Construction of the Korea Relocation Program

Earnetta J. Brady, P.E.

Resident Engineer

Parcel 2 Resident Office

USAG Humphreys

17 February 2011

Peninsula Engineer Conference



®

US Army Corps of Engineers
BUILDING STRONG®



Agenda

- Korea Relocation Overview
- USAG Humphreys Master Plan
- Laying the “Ground Work”
- Program Magnitude
- Various Challenges

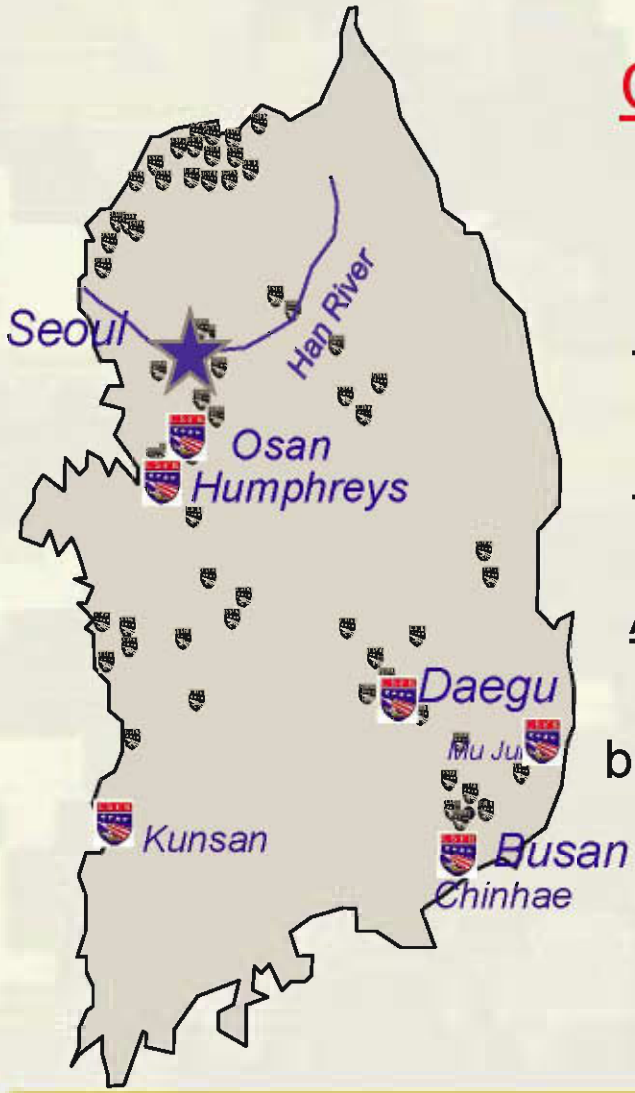


Korea Relocation Program Overview



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US - ROK Alliance Transformation



Critical Components

Transform: Establishes new Alliance War-fighting Command Structures

Enhance: Improves Deterrence and War-fighting Capabilities, Speed and Agility

Shape: Right Sizes Force Structure Based Upon ROK and US Enhanced Capabilities

Align: Consolidates US Forces into two Enduring Hubs creating a less intrusive presence while posturing US Forces for better peninsular and regional security

Transformation consolidates 104 Camps & Stations to Two Enduring Hubs



The Korea Relocation Program

- The Korea Relocation Program consists of two main components:
 - Yongsan Relocation Program (YRP)
 - Land Partnership Plan (LPP)
- This Program is the largest Base Relocation in the Department of Defense



Yongsan Residual Plan



Future Embassy

Future Embassy

Seoul Tower

Camp Colner

Camp Morse

8th Army Retreat Ctr

Camp Kim

GSA

Yongsan Main Post

Hilton Hotel

Hannam Village

War Memorial

Water Treatment Plant

Niblo Barracks

New MND HQ Bldg

USFK Residual

Taxi Annex

UN Compound

Yongsan South Post

Tmp Compound

Cultural Museum

Embassy Housing

Sobingo

H-208

Sewage Treatment Plant

Han River

US retains Dragon Hill Complex ~20 acres & Communications Facility on Camp Morse

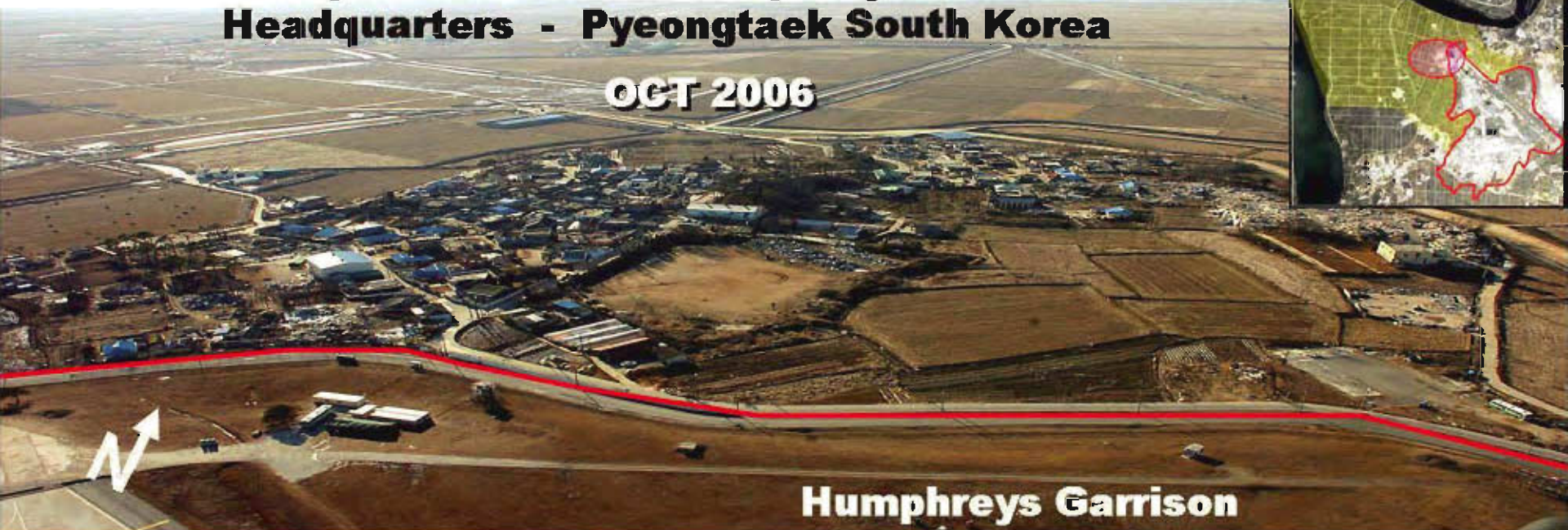
USAG Humphreys Master Plan



BUILDING STRONG®

Land Development at USAG Humphreys for Future USFK Headquarters - Pyeongtaek South Korea

OCT 2006



Humphreys Garrison

JUNE 2007



Humphreys Garrison

USAG-HUMPHREYS FUTURE

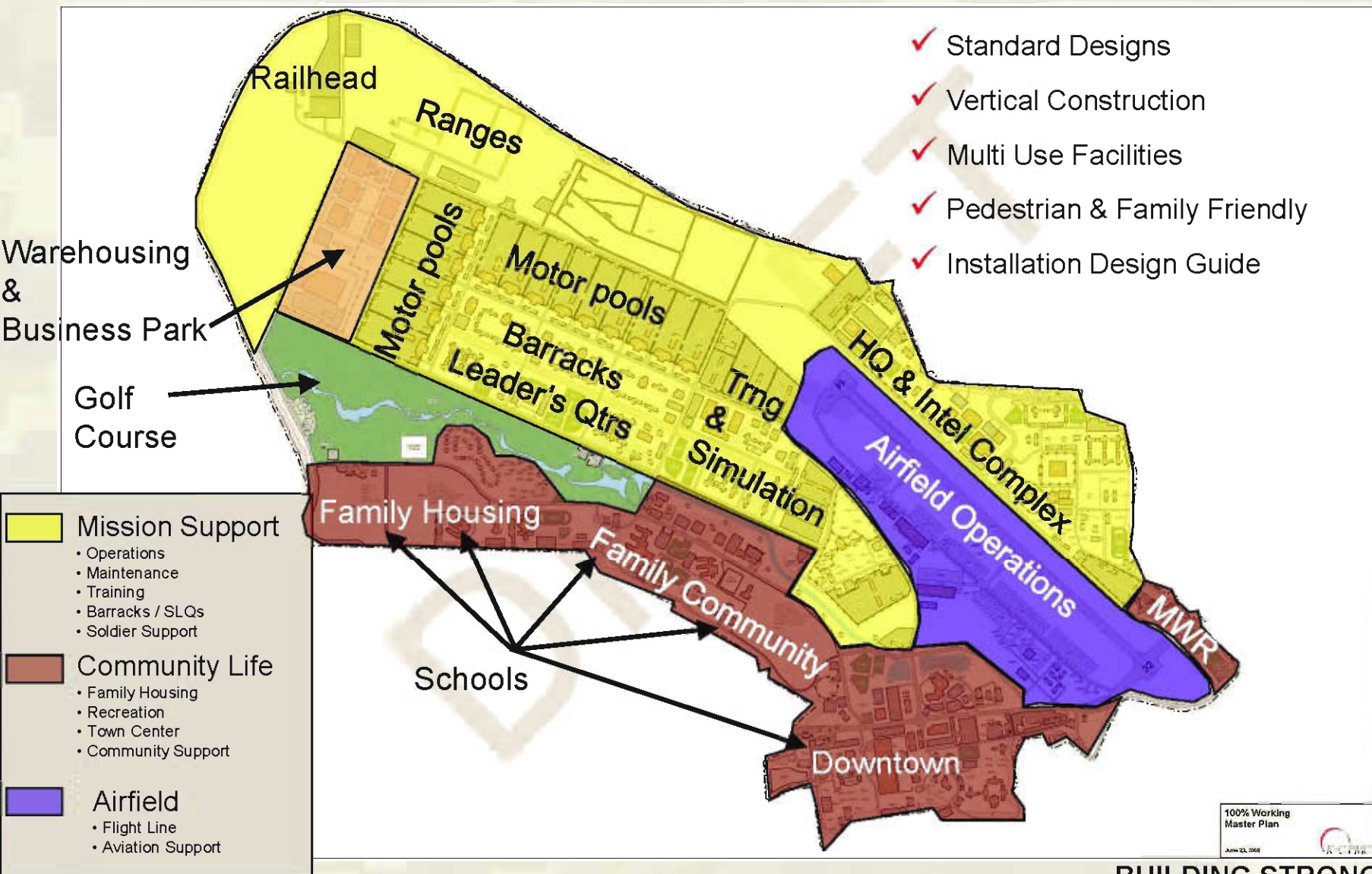
Parcel	Size
1	205 acres
K	137 acres
2A	570 acres
2B	1422 acres
Existing	1210 Acres
TOTAL	3538 acres

Total = 3,538 acres

Existing
Humphreys
1,210 acres



USAG Humphreys Master Plan



100% Working Master Plan
 JUN 23, 2008

Laying The “Ground Work”



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The Big Fill

100 Year Flood = 3.0 Meters

50 Year Flood = 2.6 Meters

Height = 3.5 Meters

Sea Level

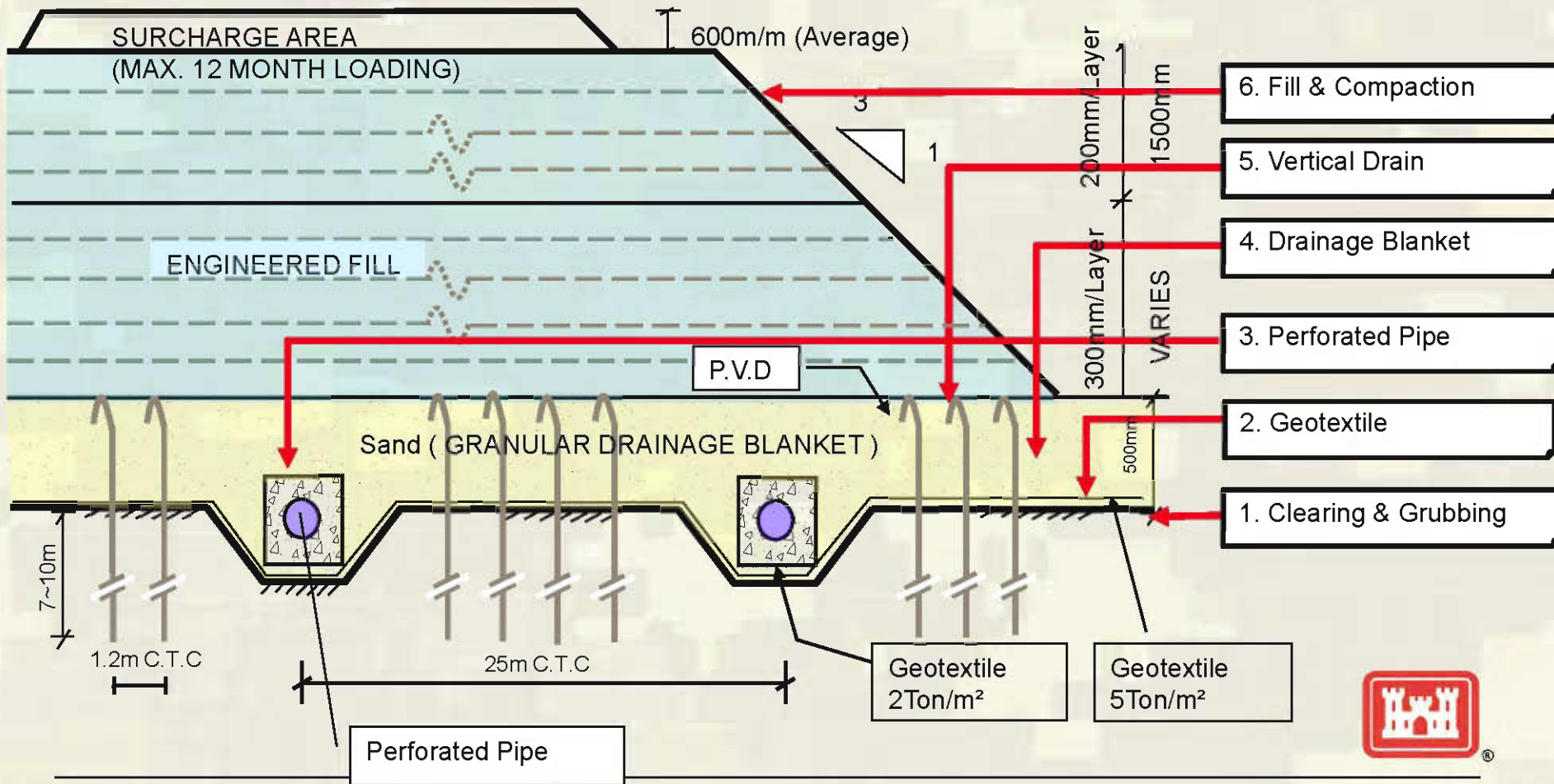
Levee

Fill

Rice Fields



EARTHWORK SEQUENCE





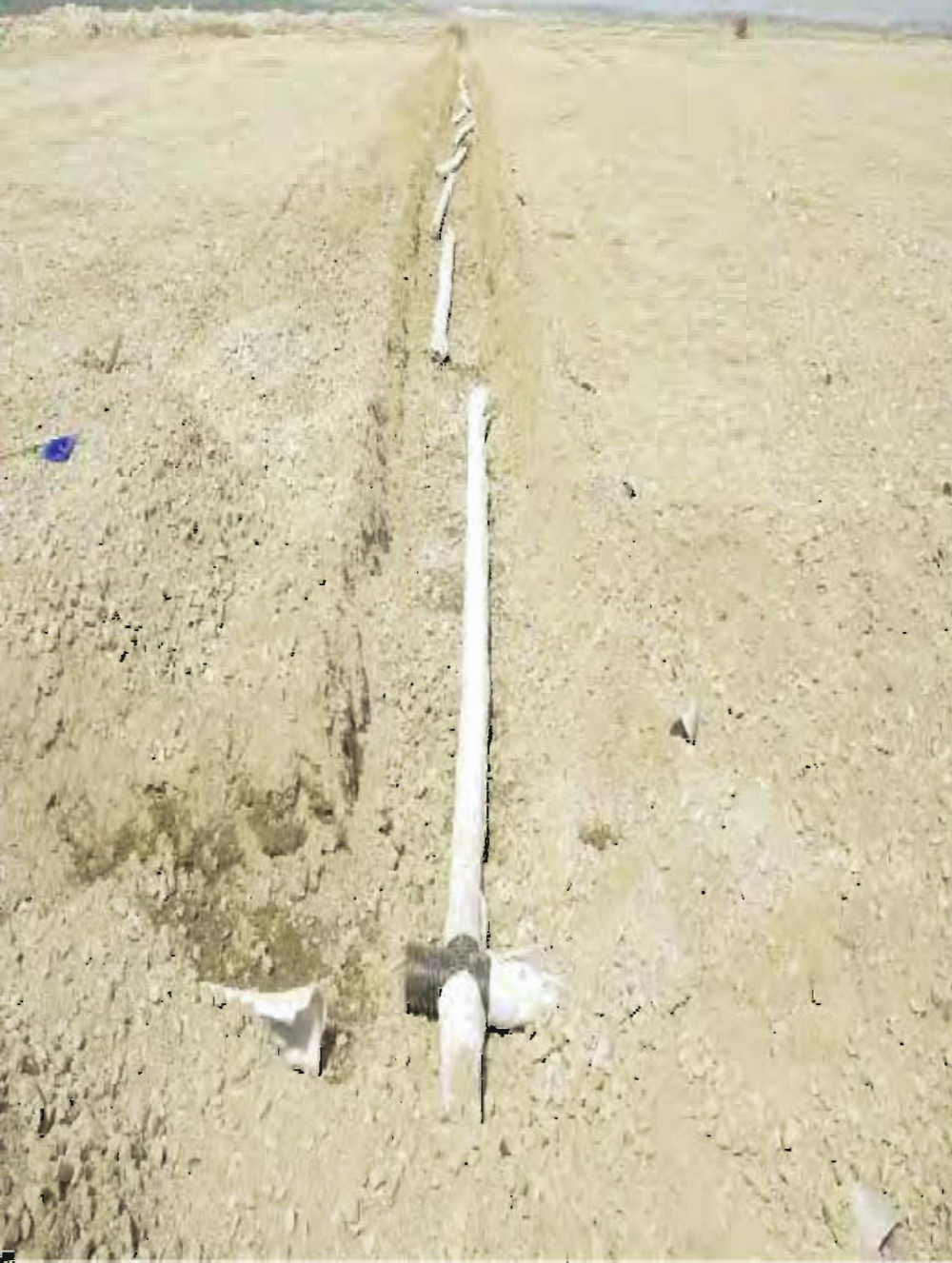
1. Cleaning and Grubbing



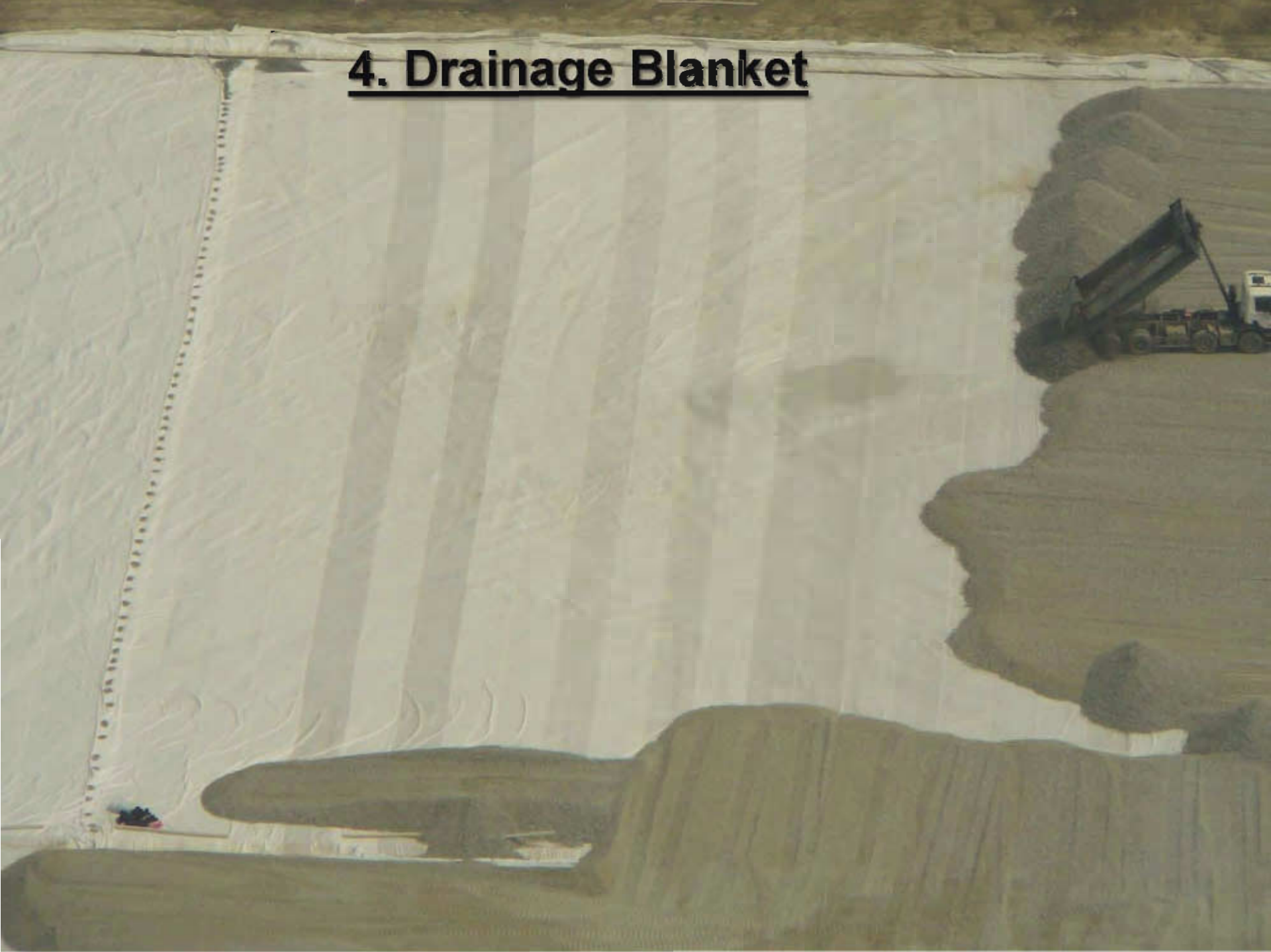
2. Installing Geotextile



3. Perforated Pipe Installation



4. Drainage Blanket



5. Prefabricated Drain Installation (PVD)



6. Fill and Compaction



6. Fill and Compaction



Vehicle Maintenance w/CO ops
Nov 10



Vehicle Maintenance w/CO ops MP Hill

Nov 10



07 Barracks

Apr 08



07 Barracks
Oct 09



07 Barracks
Oct 10



Barracks and Dining Facility at MP Hill



Army Family Housing



USAG Humphreys Housing Plans



High-Rise Model

Future Family Housing
2,400 Homes through the Humphreys Housing Opportunity
432 YRP/AFHNC Triads
114 Senior Leader Quarters (SLQ)
142 Existing Homes
3,088 Family Units Total



"Townhouse" Concept



Current Downtown Model

Future Senior Leader Housing
92 Townhouse Structures
22 Single Family Units

Current AFH on Humphreys
52 Family Units Phase I
48 Family Units Phase II
42 Family Units Phase III

Humphreys Housing Opportunity Program #1 – “Park Place”



Program Magnitude



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Relocation Program Size

- Estimated Total Construction cost approximately \$10.3 Billion
 - Currently in Design
 - \$3.5 Billion 59 Projects
 - Currently in Construction
 - \$1.4 Billion - 26 Projects



Magnitude of Construction Effort

- 11 Million Cubic Meters of Engineered Fill
- 40 miles each of all new Water, Gas, Sewer, Power, and associated treatment plants, substations, etc. approx.
- New C4I - 42 miles trench and 1000 miles cable
- Demolition of 339 Facilities (1.9M SF)
- Construction of 641 Facilities
- Concrete - 2.7 Million M3 (456,900 Trucks)



Program Quantities:

11 Million Cubic Meters
of Engineered Filled

***This amount of
engineering fill could
fill the Hoover Dam
three to four times!!!***



Program Quantities



Fill every office in
the pentagon ten times



Fill the Empire State
Building four times



Program Quantities

Total truck miles hauling fill to the site equals approximately 60 round trips to the moon.



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Challenges



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Complex Program Management Organization

- MURO: Ministry of Defense USFK Relocation Office
- USFK: US Forces Korea
- PMC: Program Management Consortium
(Kunwon-CH2M HILL PMC)
- Each government designated Design and Construction Agents (DCA), who act on behalf of their respective governments.
 - For DoD, the DCA is the US Army Corps of Engineers, Far East District

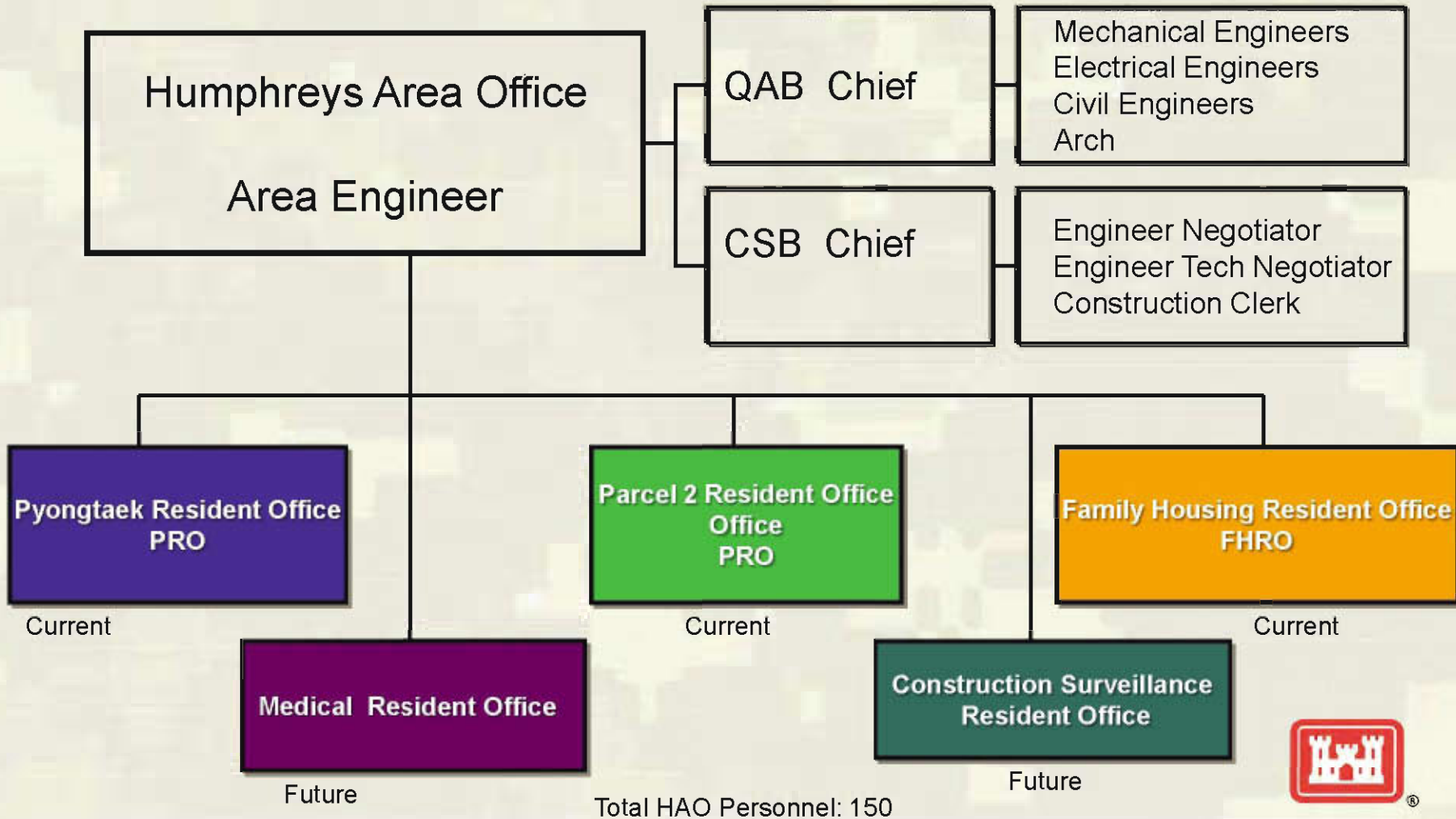


International Environment

- Over half the program is executed by the ROK with Corps Oversight
- Nearly all actions are governed by various International Agreements called “Agreed Recommendations”
 - The primary example is the “*Engineering Memorandum of Understanding*” or EMOU, which governs program Design and Construction



Humphreys Area Office



Total HAO Personnel: 150



Personnel Challenges

- Construction Strength ~ Field Office's:
 - 24 at program start, now up approximately 50
- Required Peak Strength:
 - Approximately 150
- How do we get there?



Personnel Challenges

- Regular Personnel Actions/Announcements, USA Jobs, etc.
- Direct Examining Unit (DEU) Lists and Certs
- Personnel Force Innovation - PFI
 - ▶ DOD Program to employ all service Reserve volunteers to fill vacancies
- Contract Services
- Local National Hires



Questions?

